

**MINOLTA MAXXUM AF ZOOM 28-85mm F3.5-F4.5 (2552-600)**

## DIMENSIONS & WEIGHT

Dimensions :  $\phi 68.5$  (max. diameter)  $\times$   
85.5 mm (max. length)

Weight : 490 g

Filter-thread diameter :  $\phi 55$  mm (P=0.75)

Lens hood diameter :  $\phi 55$  mm (clip-on)



Focusing : AF, FA, M  
Type : Front-component focusing  
Minimum focusing distance : 0.8 m

Distance scale :  $\frac{2.8 \text{ 3} \quad 3.5 \quad 4 \text{ 5} \quad 7 \text{ 10} \quad 15 \quad 30 \text{ (ft)}}{0.8 \text{ 0.9} \quad 1 \text{ 1.2} \quad 1.5 \quad 2 \quad 3 \quad 5 \text{ 10} \text{ (m)}}$

Infrared correction scale :  $\left( \begin{array}{ccccc} | & | & | & | & | \\ 85 & (70) & 50 & (35) & 28 \end{array} \right)$

Depth-of-field scale : No

With macro capability :  $\frac{1}{4} \times$  (max. magnification),  
"AF" impossible

## ACCESSORIES

Lens case (LH-1033)  
 Lens hood (6552-810)

## ZOOMING

Type	: Mechanical-compensation zoom lens, Rotary 2-ring
Zooming scale	: 85 70 50 35 28
Zooming ratio	: $3\times$

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Part No.	Page	Part No.	Page	Part No.	Page
2552-0020-----	5	2552-1110-----	5	2552-1372-----	1
2552-0040-----	5	2552-1112-----	4	2550-1374-----	1
2552-0113-----	4	2552-1130-----	4	2552-1379-----	4
2552-0232-----	5			2555-1380-----	2
2555-0240-----	1	2552-1230-----	3	2552-1382-----	2
2552-0371-----	4	2552-1233-----	1	2552-1384-----	2
2552-0381-----	2	2552-1235-----	3	2552-1385-----	1
2554-0383-----	2	2552-1236-----	3	2555-1387-----	2
2552-0430-----	3	2552-1237-----	2	2552-1391-----	1
2503-0433-----	4	2552-1242-----	1	2552-1392-----	1
2552-0820-----	5	2552-1244-----	3	2552-1393-----	1
				2552-1394-----	1
2552-1102-----	5	2552-1361-----	1	2552-1395-----	1
2552-1103-----	5	2552-1362-----	1		
2503-1104-----	5	2552-1363-----	1	2554-1402-----	1
2552-1106-----	5	2552-1364-----	1	2554-1416-----	3
2552-1108-----	5	2552-1365-----	1	2554-1417-----	3

AF ZOOM 28 ~ 85mm F3.5 ~ 4.5(22) Code No.2552-100  
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2554-1418-----	3	2503-1461-----	4	2552-1503-----	3
2551-1420-----	1	2503-1462-----	4		
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2554-1423-----	2	2503-1464-----	4		
2550-1424-----	1	2503-1467-----	4	2552-1801-----	5
2554-1426-----	3	2503-1468-----	4	2552-1802-----	5
2554-1431-----	2	2503-1469-----	4	2552-1803-----	5
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2554-1435-----	3	2552-1472-----	4	2552-1813-----	5
2552-1438-----	3	2552-1473-----	4		
2550-1444-----	1	2552-1474-----	4	Screw	
2550-1446-----	1	2552-1475-----	4	9611-1422-07-----	1
2552-1446-----	2	2552-1476-----	4	9611-1623-07-----	2
2552-1447-----	2			9611-1625-07-----	3
2552-1448-----	2	2552-1501-----	3	9611-1630-07-----	4
2503-1460-----	4	2555-1502-----	3	9611-1635-07-----	3

I N D E X

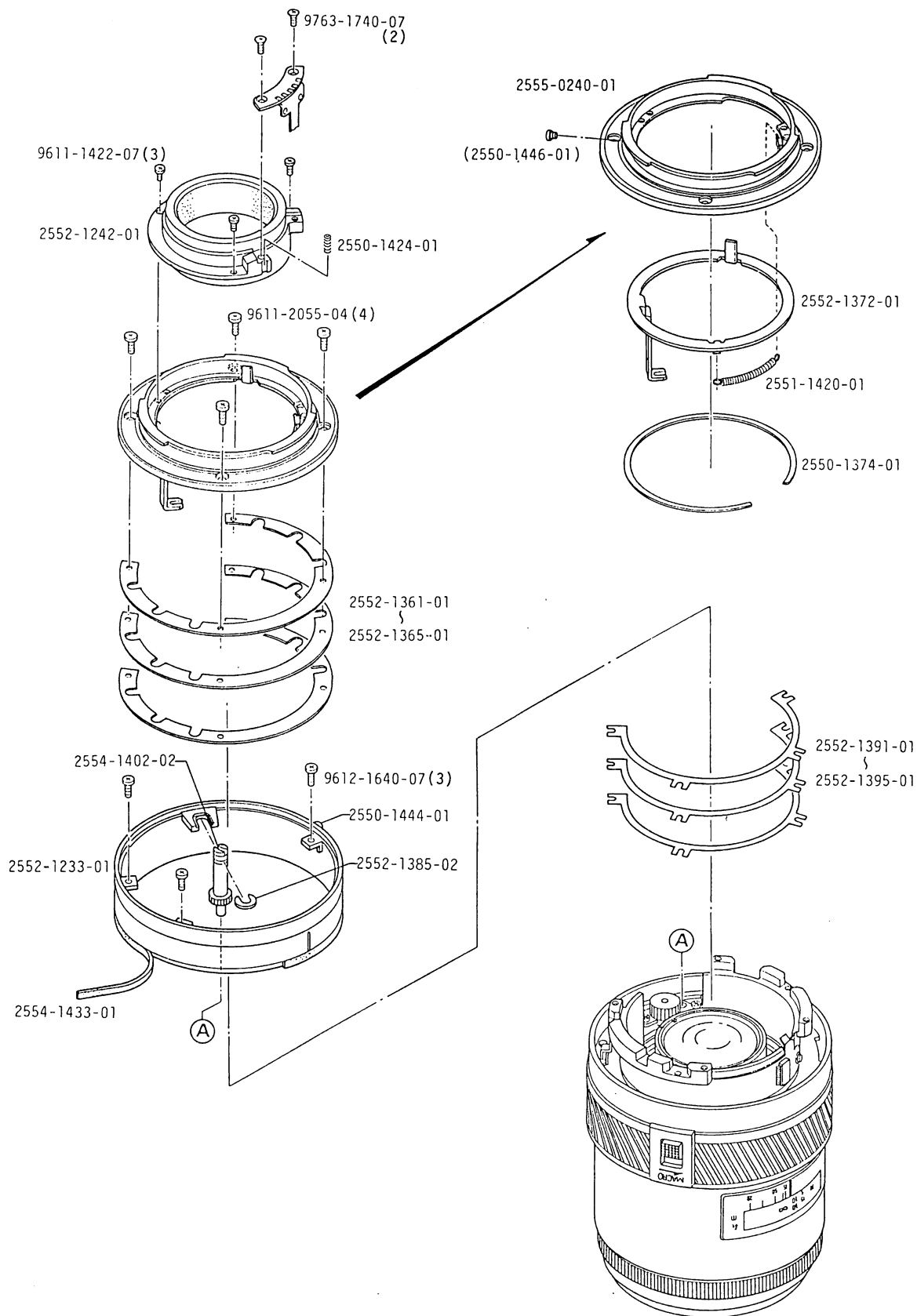
Part No.	Page	Part No.	Page	Part No.	Page
9611-2055-04-----	1				
9612-1616-07-----	2,3				
9612-1640-07-----	1				
9612-1650-07-----	2				
9613-1622-07-----	3,4				
9613-1625-07-----	3				
9622-1625-02-----	3				
9762-1735-07-----	2				
9763-1740-07-----	1				
Washer					
9792-1740-50-----	3				

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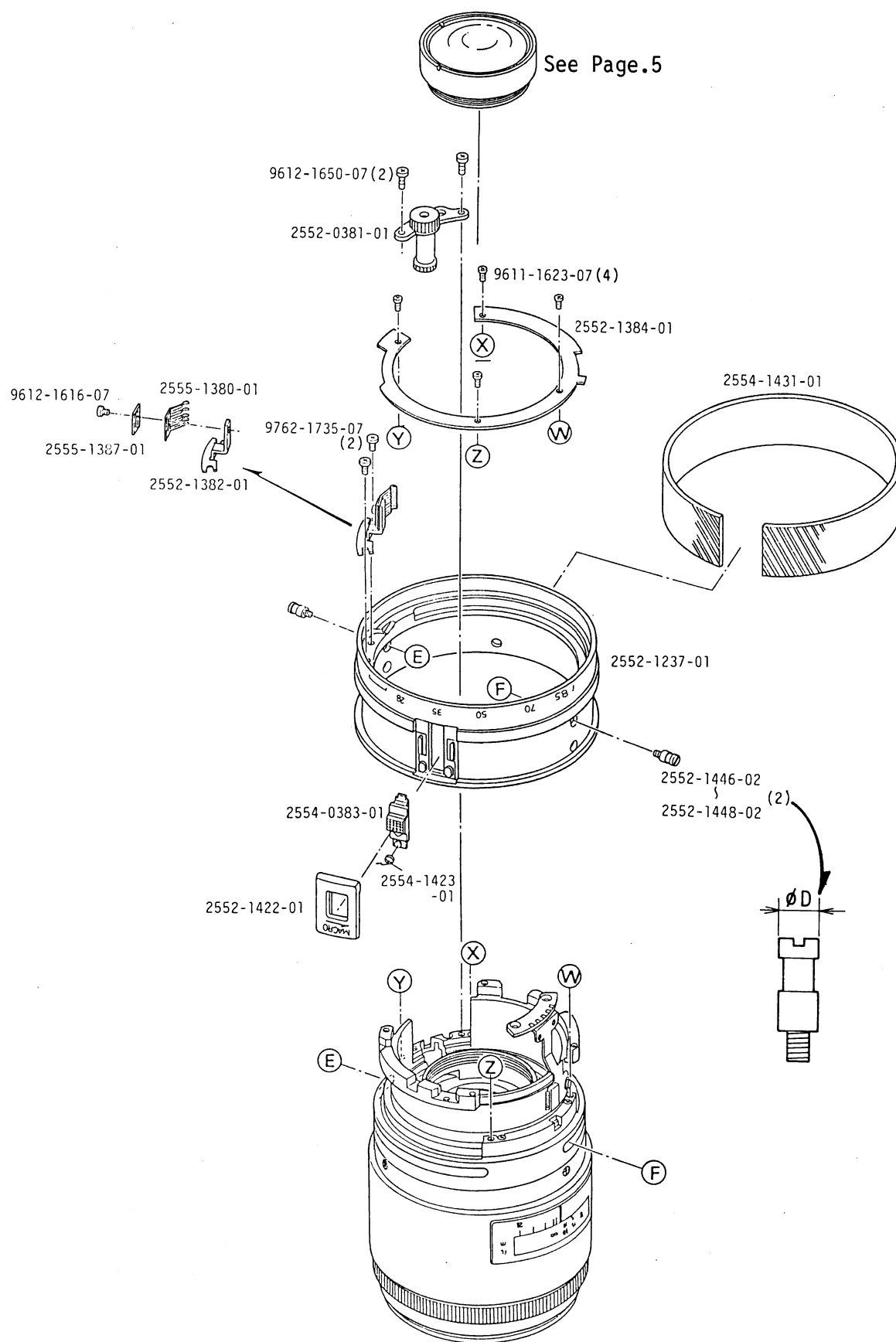


Part No.	Part Name		Qty.
2555-0240-01	Bayonet mount set	バヨネットマウント セット	1
(2550-1446-01)	Screw	ストッパービス	1
2552-1233-01	Outer barrel	外筒	1
2552-1242-01	Light shield ring	遮光筒	1
2552-1361-01	Back washer - A (t=0.05)	バックワッシャー-A	} Some
2552-1362-01	Back washer - B (t=0.07)	バックワッシャー-B	
2552-1363-01	Back washer - C (t=0.1)	バックワッシャー-C	
2552-1364-01	Back washer - D (t=0.2)	バックワッシャー-D	
2552-1365-01	Back washer - E (t=0.5)	バックワッシャー-E	
2552-1372-01	Preset ring	プリセットリング	1
2550-1374-01	Preset ring pressure	プリセットリング押え	1
2552-1385-02	C - washer	C ワッシャー	1
2552-1391-01	Coupler adjusting washer - A (t=0.05)	カプラー調整ワッシャー-A	} Some
2552-1392-01	Coupler adjusting washer - B (t=0.07)	カプラー調整ワッシャー-B	
2552-1393-01	Coupler adjusting washer - C (t=0.1)	カプラー調整ワッシャー-C	
2552-1394-01	Coupler adjusting washer - D (t=0.2)	カプラー調整ワッシャー-D	
2552-1395-01	Coupler adjusting washer - E (t=0.5)	カプラー調整ワッシャー-E	
2554-1402-02	Coupler	カプラー	1
2551-1420-01	Main spring	メインスプリング	1
2550-1424-01	Spring	アーススプリング	1
2554-1433-01	Friction cloth - B	摩擦布B	1
2550-1444-01	Bayonet point	バヨネット標点	1
9611-1422-07	Phillips type screw	十字穴付なべ頭小ねじ	3
9611-2055-04	Phillips type screw	十字穴付なべ頭小ねじ	4
9612-1640-07	Phillips type screw	十字穴付なべ頭小ねじ	3
9763-1740-07	Tap tite screw	十字穴付半丸頭 タップタイトねじ	2

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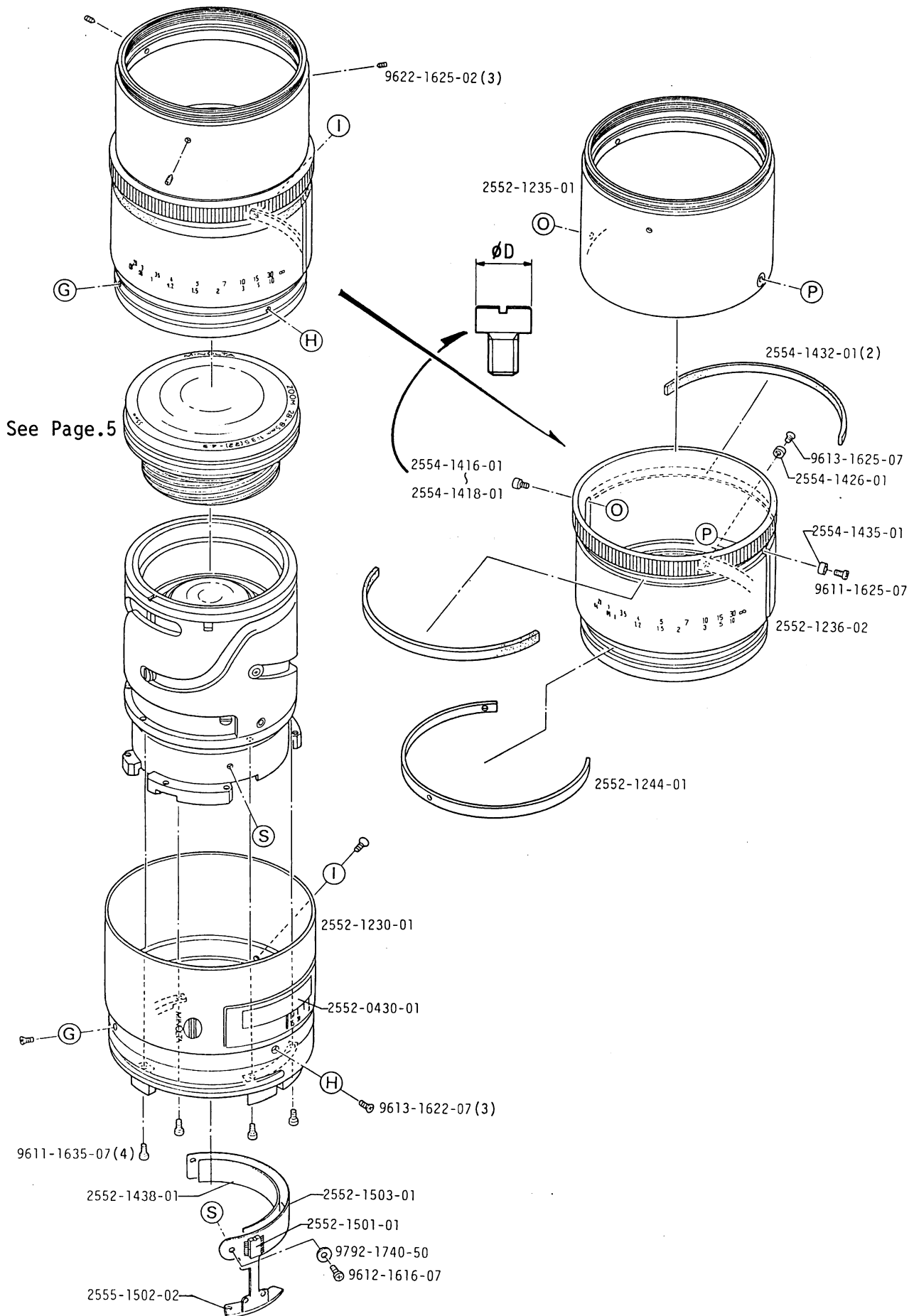
Part No.	Part Name		Qty.
2552-0381-01	Gear set	ギヤーセット	1
2554-0383-01	Macro changeover lever set	マクロ切換レバーセット	1
2552-1237-01	Zoom ring	ズームリング	1
2555-1380-01	Brush	ブラシ	1
2552-1382-01	Brush connecting plate	ブラシ連動板	1
2552-1384-01	Zoom ring pressure	ズームリング押え	1
2555-1387-01	Brush pressure plate	ブラシ押え板	1
2552-1422-01	Macro changeover lever pressure	マクロ切換レバー押え	1
2554-1423-01	Macro spring	マクロスプリング	1
2554-1431-01	Leather	貼皮	1
2552-1446-02	Zoom operation pin - A (D= $\phi$ 2.57)	ズーム操作ピンA	} 2
2552-1447-02	Zoom operation pin - B (D= $\phi$ 2.52)	ズーム操作ピンB	
2552-1448-02	Zoom operation pin - C (D= $\phi$ 2.54)	ズーム操作ピンC	
9611-1623-07	Phillips type screw	十字穴付なべ頭小ねじ	4
9612-1616-07	Phillips type screw	十字穴付なべ頭小ねじ	1
9612-1650-07	Phillips type screw	十字穴付なべ頭小ねじ	2
9762-1735-07	Tap tite screw	十字穴付なべ頭 タップタイトねじ	2



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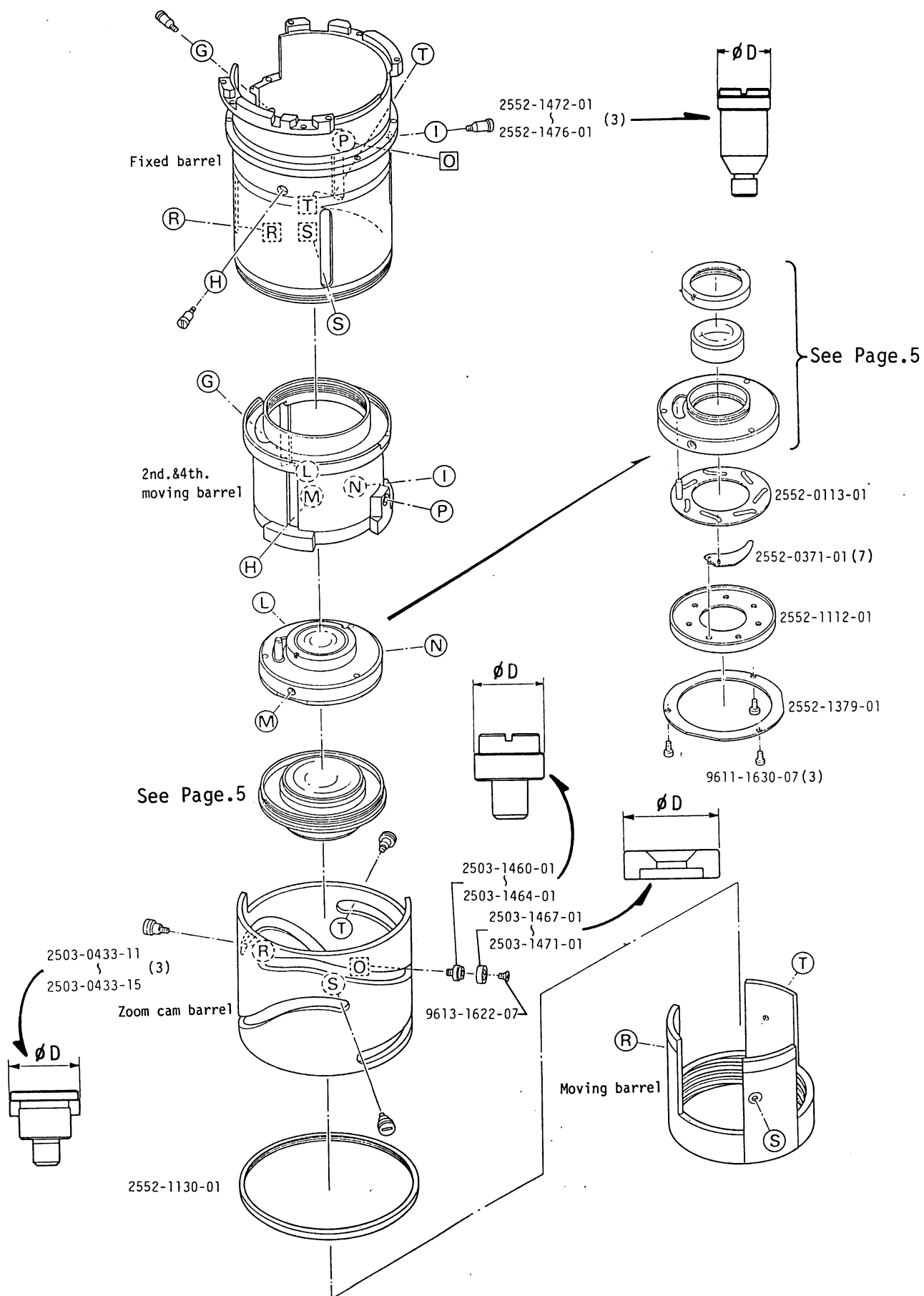
MAXXUM AF ZOOM 28 ~ 85mm F3.5 ~ 4.5(22) Code No.2552-600



Part No.	Part Name		Qty.
2552-0430-01	Distance scale window set	距離表示窓セット	1
2552-1230-01	Outer ring	固定保持環	1
2552-1235-01	Filter ring	鏡頭環	1
2552-1236-02	Focusing ring	距離リング	1
2552-1244-01	Focus guide	フォーカスガイド	1
2554-1416-01	Filter ring guide pin - A (D= $\phi$ 3.0)	フォーカス連動ピンA	1
2554-1417-01	Filter ring guide pin - B (D= $\phi$ 3.01)	フォーカス連動ピンB	
2554-1418-01	Filter ring guide pin - C (D= $\phi$ 3.02)	フォーカス連動ピンC	
2554-1426-01	Focus stopper	フォーカスストッパー	1
2554-1432-01	Friction cloth - A	摩擦布A	2
2554-1435-01	Collar	カラー	1
2552-1438-01	Tape	テープ	1
2552-1501-01	IC(TOSHIBA ML00C)	IC	1
2555-1502-02	Lens contact board	信号基板	1
2552-1503-01	Frexible PC board	フレキ	1
9611-1625-07	Phillips type screw	十字穴付なべ頭小ねじ	1
9611-1635-07	Phillips type screw	十字穴付なべ頭小ねじ	4
9612-1616-07	Phillips type screw	十字穴付なべ頭小ねじ	1
9613-1622-07	Phillips type screw	十字穴付半丸頭小ねじ	3
9613-1625-07	Phillips type screw	十字穴付半丸頭小ねじ	1
9622-1625-02	Screw	とがり先止め	3
9792-1740-50	Washer	薄ワッシャー	1

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Part No.	Part Name		Qty.
2552-0113-01	Diaphragm operation plate set	絞り操作板セット	1
2552-0371-01	Diaphragm blade set	絞り羽根セット	7
2503-0433-11	1st. guide pin - A set (D= $\phi$ 5.50)	第1案内ピンAセット	3
2503-0433-12	1st. guide pin - B set (D= $\phi$ 5.51)	第1案内ピンBセット	
2503-0433-13	1st. guide pin - C set (D= $\phi$ 5.52)	第1案内ピンCセット	
2503-0433-14	1st. guide pin - D set (D= $\phi$ 5.53)	第1案内ピンDセット	
2503-0433-15	1st. guide pin - E set (D= $\phi$ 5.54)	第1案内ピンEセット	
2552-1112-01	Diaphragm pressure ring	絞り押え環	1
2552-1130-01	Zoom cam ring pressure	ズームカム環押え	1
2552-1379-01	Diaphragm pressure ring pressure	絞り押え環押え	1
2503-1460-01	2nd. guide pin - A (D= $\phi$ 4.03)	第2案内ピンA	1
2503-1461-01	2nd. guide pin - B (D= $\phi$ 4.02)	第2案内ピンB	
2503-1462-01	2nd. guide pin - C (D= $\phi$ 4.01)	第2案内ピンC	
2503-1463-01	2nd. guide pin - D (D= $\phi$ 4.00)	第2案内ピンD	
2503-1464-01	2nd. guide pin - E (D= $\phi$ 3.99)	第2案内ピンE	
2503-1467-01	2nd. guide roller - A (D= $\phi$ 5.53)	第2案内ローラーA	1
2503-1468-01	2nd. guide roller - B (D= $\phi$ 5.52)	第2案内ローラーB	
2503-1469-01	2nd. guide roller - C (D= $\phi$ 5.51)	第2案内ローラーC	
2503-1470-01	2nd. guide roller - D (D= $\phi$ 5.50)	第2案内ローラーD	
2503-1471-01	2nd. guide roller - E (D= $\phi$ 5.49)	第2案内ローラーE	
2552-1472-01	Inner barrel pin - A (D= $\phi$ 4.03)	内筒ピンA	3
2552-1473-01	Inner barrel pin - B (D= $\phi$ 4.02)	内筒ピンB	
2552-1474-01	Inner barrel pin - C (D= $\phi$ 4.01)	内筒ピンC	
2552-1475-01	Inner barrel pin - D (D= $\phi$ 4.00)	内筒ピンD	
2552-1476-01	Inner barrel pin - E (D= $\phi$ 3.99)	内筒ピンE	
9611-1630-07	Phillips type screw	十字穴付なべ頭小ねじ	3
9613-1622-07	Phillips type screw	十字穴付半丸頭小ねじ	1

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■ When repairing following parts, must be checked resolving power by projection.

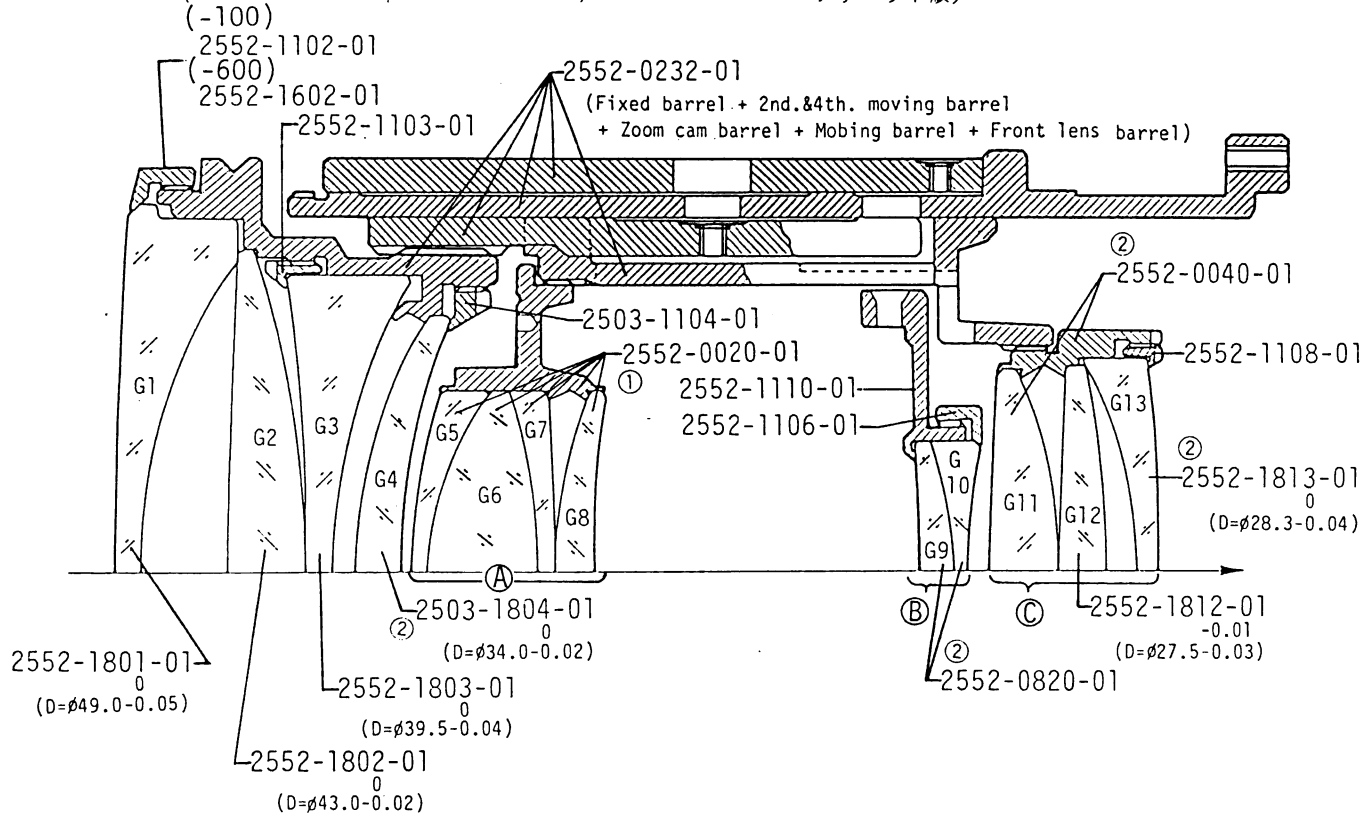
■ 下記部品を修理した場合は、必ず投影解像力を確認して下さい。

①: The influential lens element in the lens performance. (Number shows in order.)

①: レンズ性能によく影響するレンズ。(数字は順位を示す)

Ⓐ: The influential lens group in the lens performance. (Influence: In alphabetical order)

Ⓐ: レンズ性能によく影響するレンズ群。(影響度: アルファベット順)



Part No.	Part Name		Qty.
2552-0020-01	2nd. lens barrel set	第2玉枠セット	1
2552-0040-01	4th. lens barrel set	第4玉枠セット	1
2552-0232-01	Helicoid set	ヘリコイドセット	1
2552-0820-01	G9,G10 set	G9,G10セット	1
2552-1102-01	G1,G2 pressure ring (-100)	G1,G2押え	1
2552-1103-01	G3 pressure ring	G3押え	1
2503-1104-01	G4 pressure	G4押え	1
2552-1106-01	G9,G10 pressure ring	G9,G10押え	1
2552-1108-01	G12,G13 pressure ring	G12,G13押え	1
2552-1110-01	Inner barrel	内筒	1
2552-1602-01	G1,G2 pressure ring (-600)	G1,G2押え	1
2552-1801-01	Lens - G1	レンズG1	1
2552-1802-01	Lens - G2	レンズG2	1
2552-1803-01	Lens - G3	レンズG3	1
2503-1804-01	Lens - G4	レンズG4	1
2552-1812-01	Lens - G12	レンズG12	1
2552-1813-01	Lens - G13	レンズG13	1

# REPAIR GUIDE

■ The contents of this manual are in accordance with the assembling procedure. Therefore, follow the reverse procedure when disassembling.

## — Description of marks used —

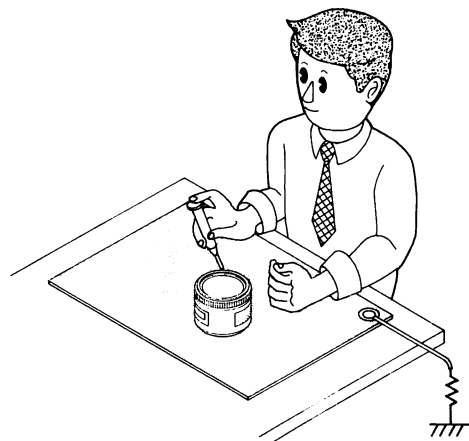
- B : Adhesive
- S : Solvent
- A : Anti-diffusion compound
- G : Lubricant
- T : Tool
- : Point of assembling and general caution

## ■ Assembling and adjusting procedure

	Page
1 Fixed barrel, Zoom cam ring, 1st moving barrel, 2nd & 4th moving barrel, Diaphragm blade, G9, G10 assembling .....	1
2 Outer ring, Flexible PC board assembling .....	2
3 Zoom ring, Macro changeover lever, Brush, Gear set, Rear lens group set assembling .....	3
■ Macro stop position adjusting .....	3
■ Brush position adjusting .....	3
4 Back washer, Outer barrel, Coupler, Bayonet mount, Light shield ring, Lens contact board assembling .....	4
■ Aperture diameter adjusting (including pre-check) .....	4
5 Middle lens group set, Focusing ring, Front lens group set, Filter ring assembling .....	5
■ Focus shift/flange back adjusting .....	6
■ Projection resolving power checking .....	6
■ Aperture diameter checking .....	6
■ General function checking .....	6
■ Macro stop position adjusting .....	6
■ Flexible PC board replacing .....	7
■ Description of focusing and zooming .....	8
■ Wiring schematic diagram and printed wiring diagram .....	9

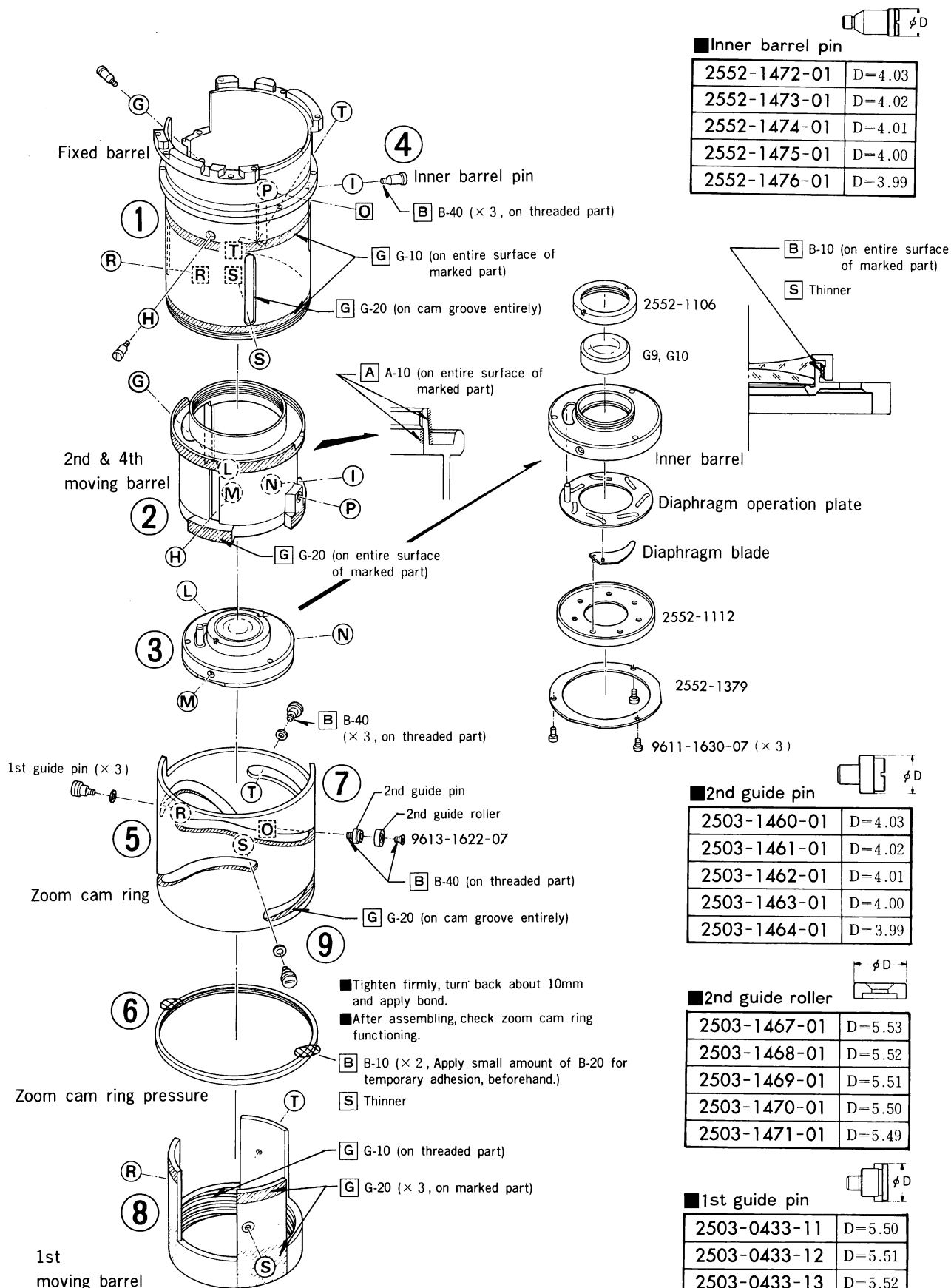
## ■ Precautions

- Since this lens uses many resin parts, keep the following in mind when assembling and adjusting.
  - Use Flonsolve or alchohol when cleaning. Never use the thinner, ketone or ether.
- Since MOS-IC is used in this lens, it is necessary to take special precautions about static electricity. When performing repairs, use the conductive mat without fail, as shown.



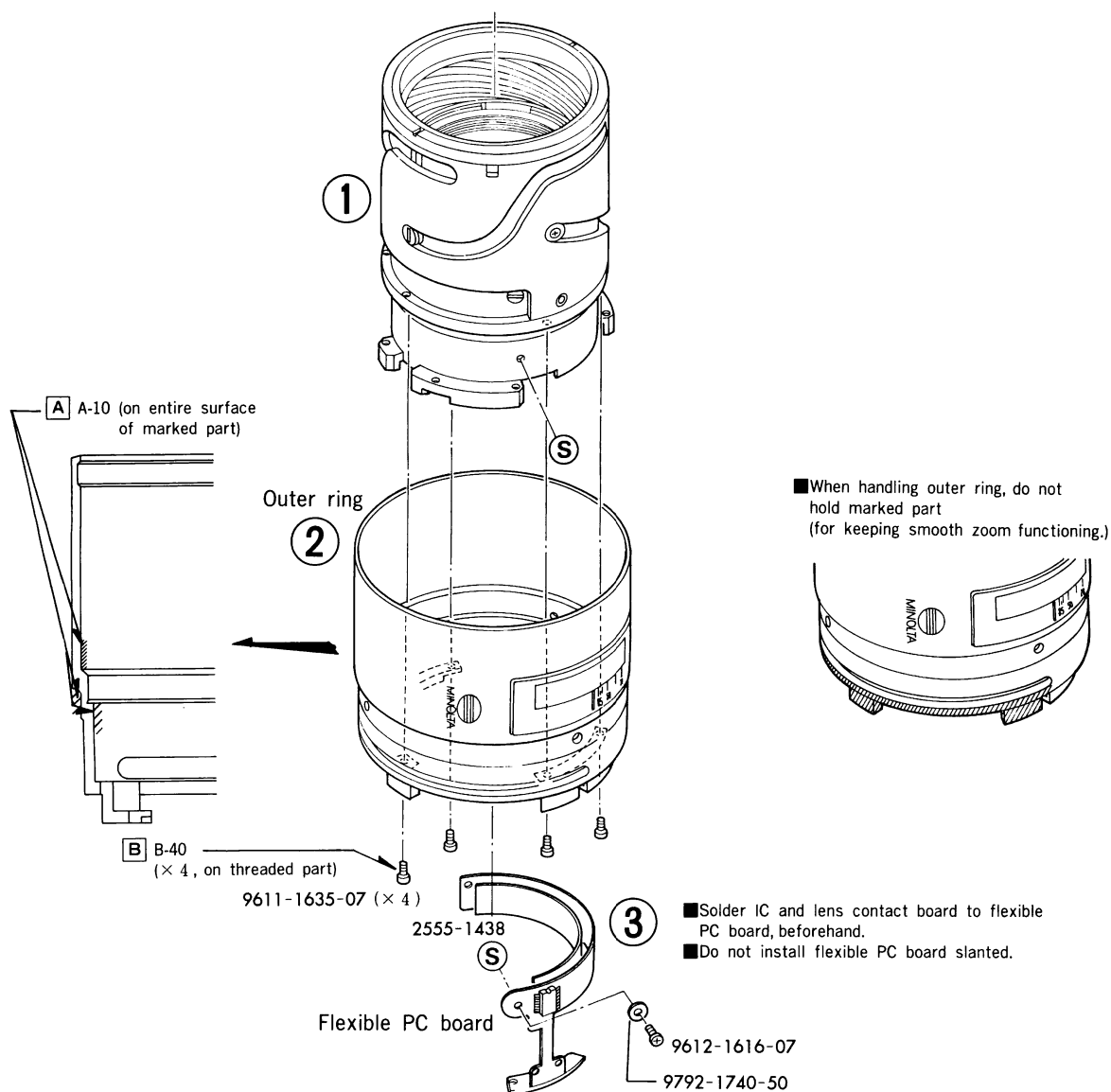
# 1 Fixed barrel, Zoom cam ring, 1st moving barrel, 2nd & 4th moving barrel, Diaphragm

■ Assemble the parts in the order of ①-⑨.

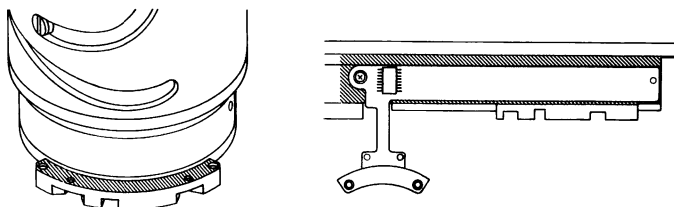


## 2 Outer ring, Flexible PC board

■ Assemble the parts in the of ①-③.



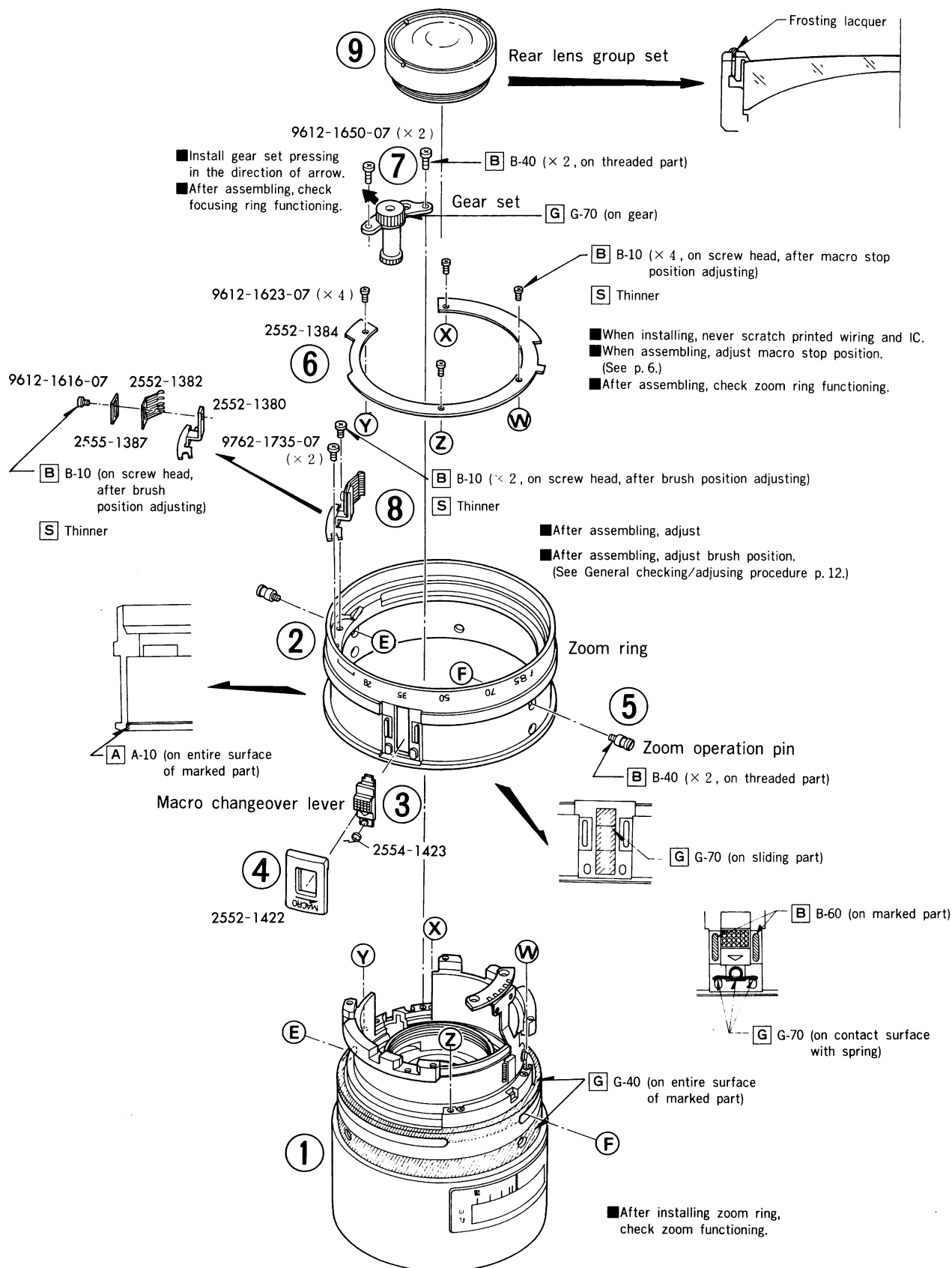
**A** A-10 (on marked part, after installing flexible PC board)





### 3 Zoom ring, Macro changeover lever, Brush, Gear set, Rear lens group set

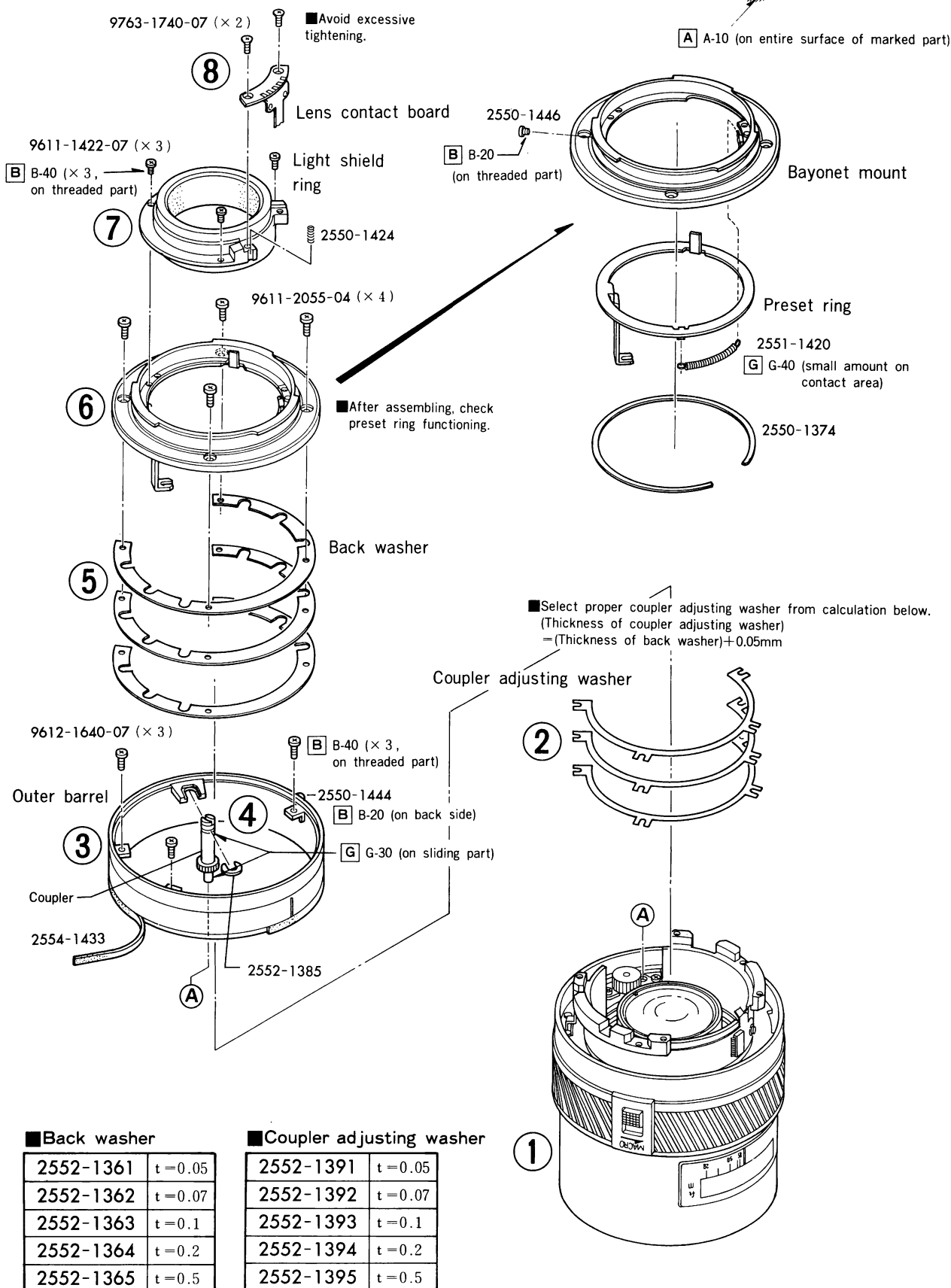
■ Assemble the parts in the order of ①-⑨.



## 4 Back washer, Outer barrel, Coupler, Bayonet mount, Light shield ring, Lens contact board

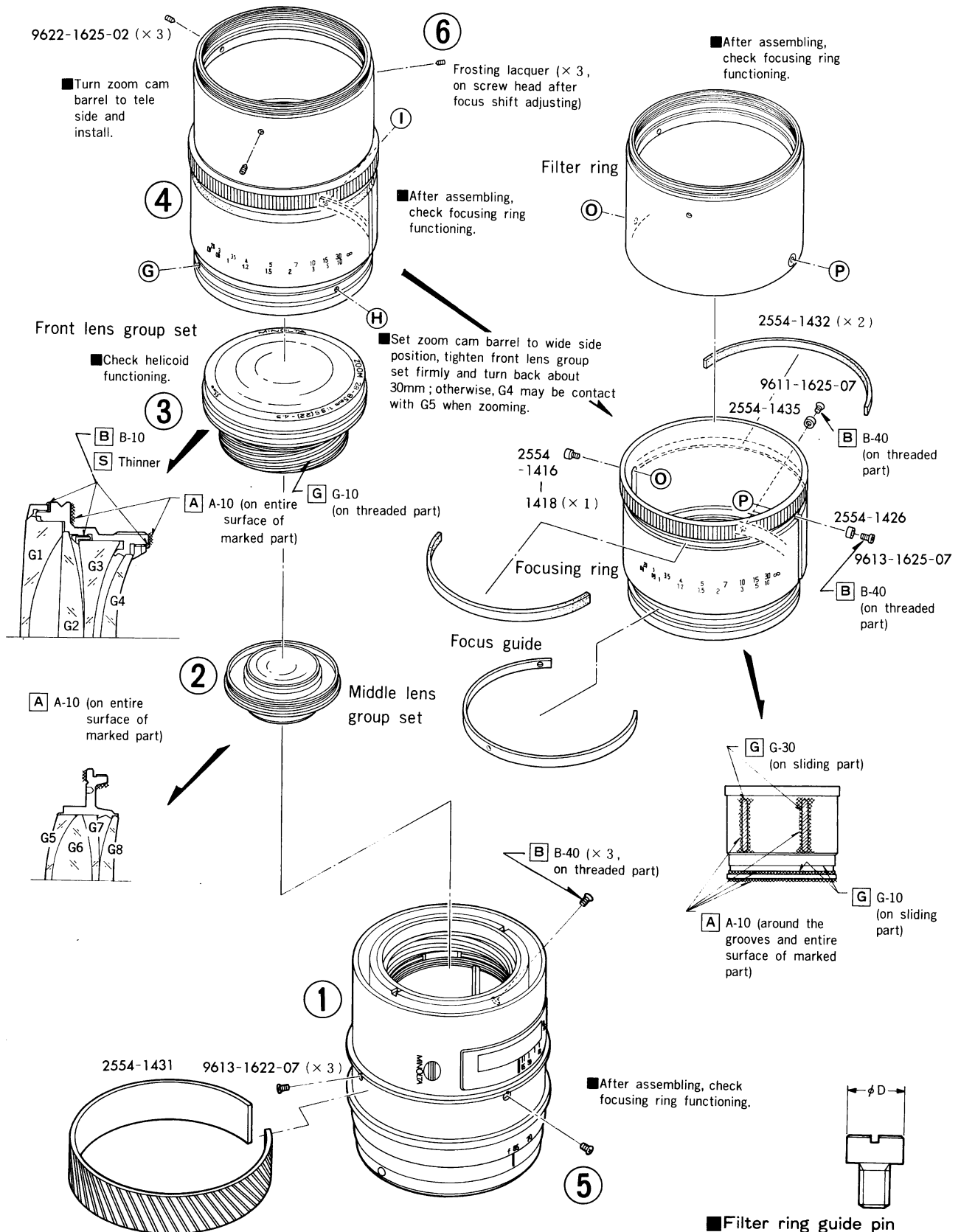
■ Assemble the parts in the order of ①-⑧.

■ After assembling, perform aperture diameter adjusting (including pre-check).  
(See General checking/adjusting procedure p. 8, 9.)



## 5 Middle lens group set, Focusing ring, Front lens group set, Filter ring

■ Assemble the parts in the order of ①-⑥.

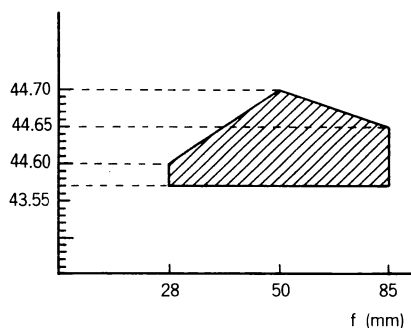


■ After assembling ①-⑥, perform the following checking/adjusting.

(1) Focus shift/flange back adjusting (See General checking/adjusting procedure p. 3.)

Allowable range

f (mm)	f' F (mm)
28	$44.57^{+0.03}_0$
50	$44.57^{+0.13}_0$
85	$44.57^{+0.08}_0$



(2) Projection resolving power checking (See General checking/adjusting procedure p. 6.)

Allowable range for Servicing (min.)

f (mm)	Distance D (m)	Center (y' = 0)	y' = 15mm	
			S	M
28	0.8-1.3	100	40	32
50	0.9-2.3	100	40	32
85	2.0-3.4	100	32	25

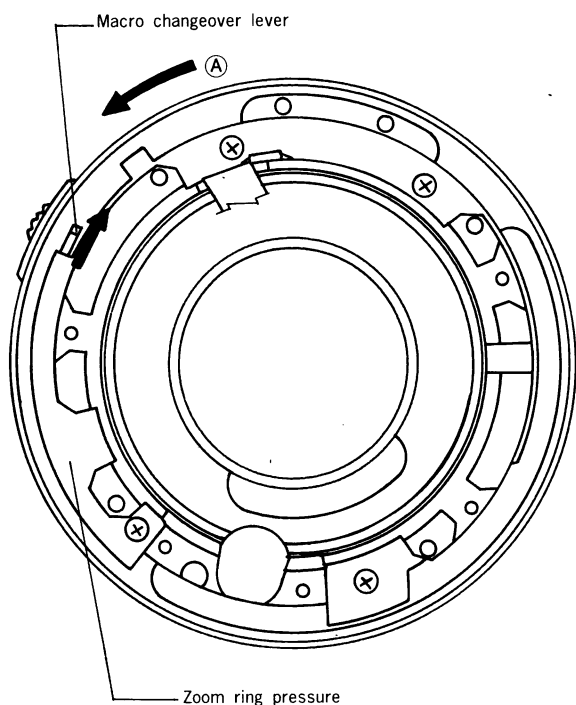
S : Sagittal image  
 M : Meridional image

(3) Aperture diameter checking (See General checking/adjusting procedure p. 9.)

■ After assembling, check general function. (See General checking/adjusting procedure p. 14.)

## Macro stop position adjusting

■ Fig. 1



- (1) Shift macro changeover lever, turn zoom ring in the direction of arrow ①, set at macro stop position.
- (2) Turn zoom ring pressure (2552-1384) in the direction of arrow ② and set at macro changeover lever, tighten screws (×4).
- (3) Turn zoom ring several times, When setting at macro stop position, check if macro changeover lever is contact with zoom ring pressure.

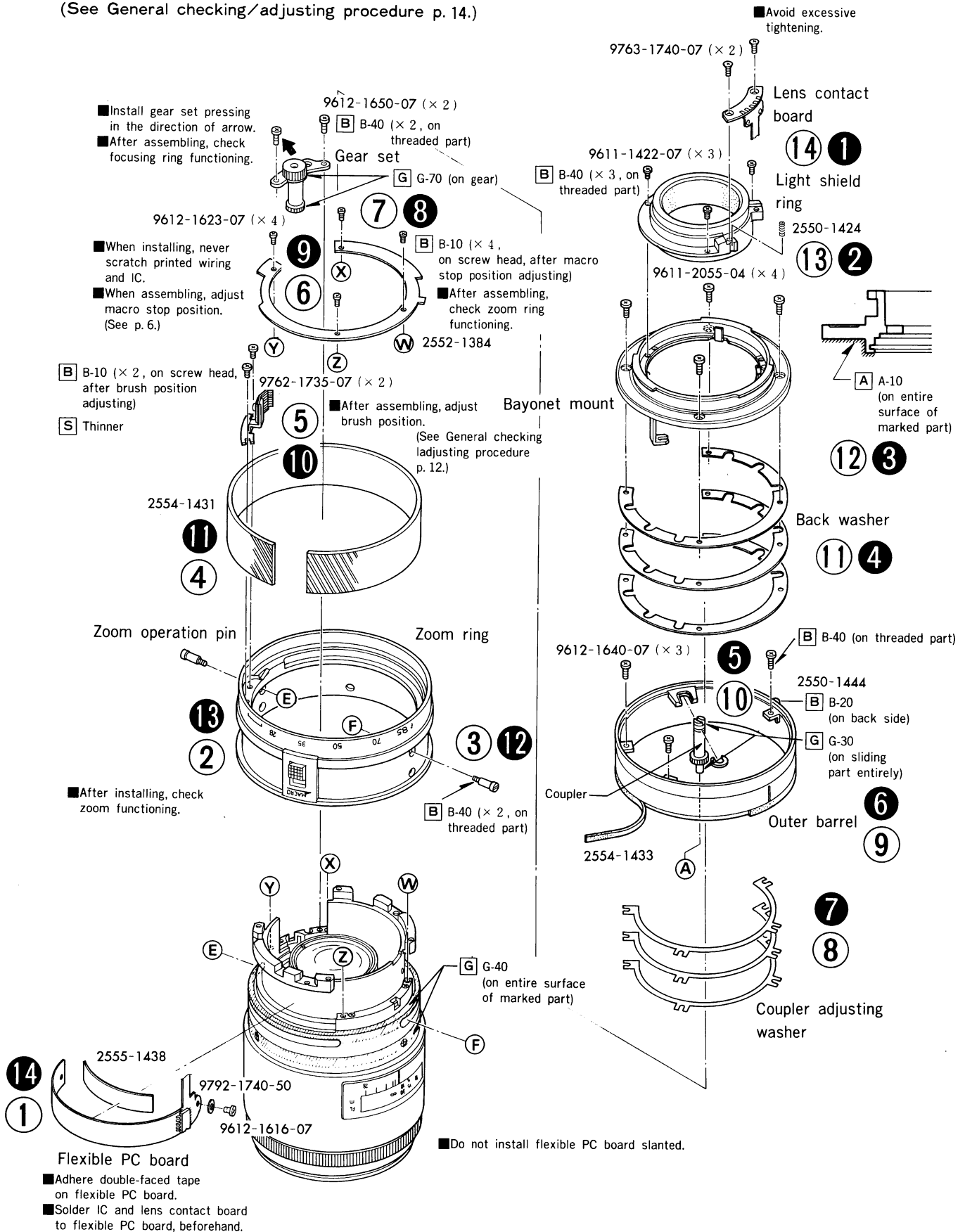
## Flexible PC board replacing

■ Disassemble the parts in the order of ①-⑭.

■ Assemble the parts in the order of ①-⑭.

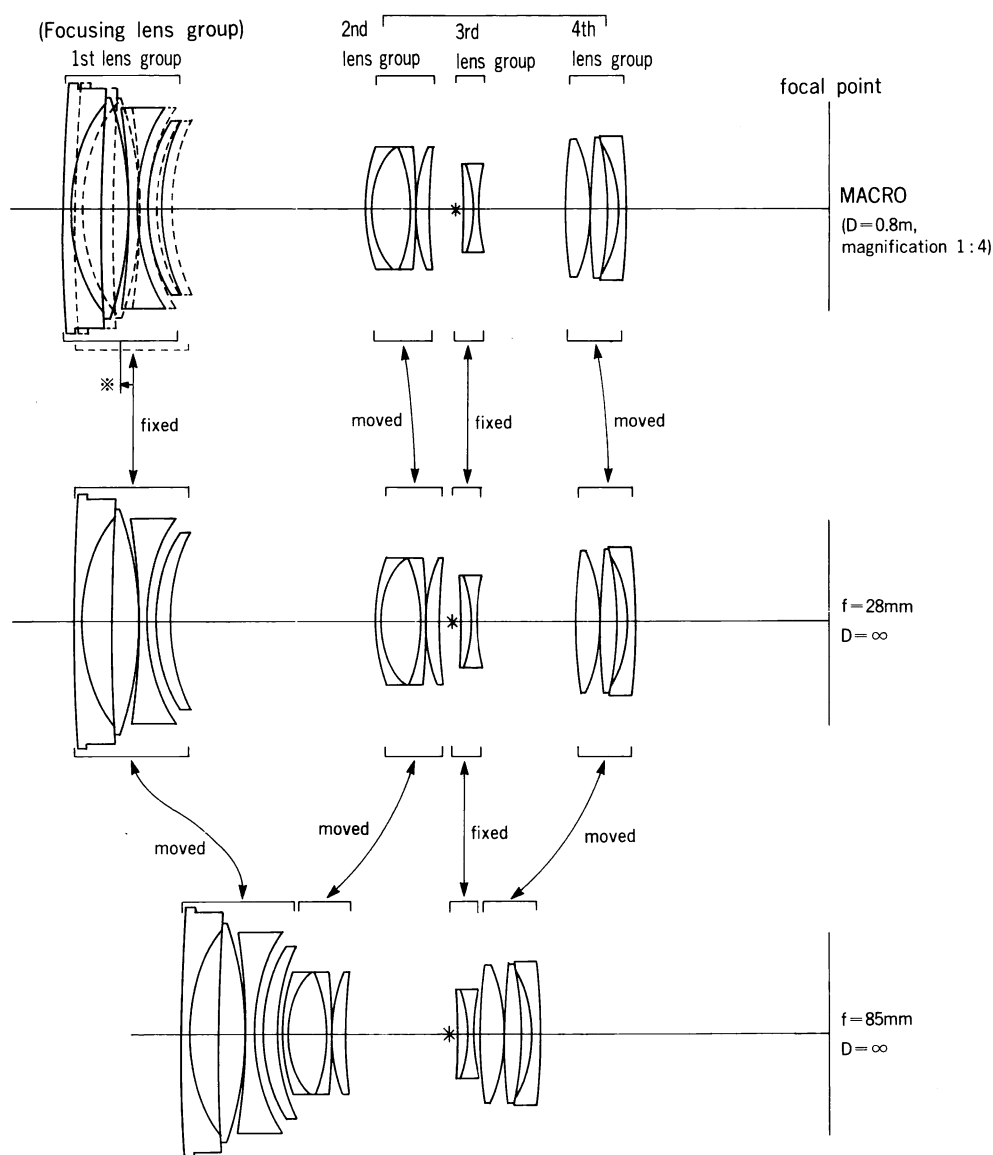
■ After assembling, check general function.

(See General checking/adjusting procedure p. 14.)



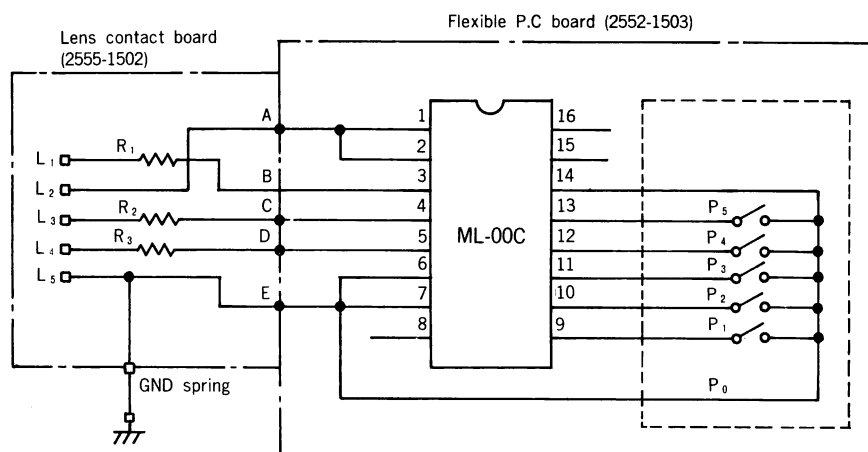
## Description of focusing and zooming (2552)

- 4-component mechanical-compensation zoom lens (negative, positive, negative and positive).  
When zooming, 2nd and 4th lens groups are moved together, 1st lens group is moved individually, 3rd lens group is fixed by rotating zoom operation ring.
- The diaphragm parts are moved with 3rd lens group together without aperture diameter changing, effective-full-aperture is changed  $f/3.5$  to  $f/4.5$  by zooming operation.  
( $f/3.5 : 28\text{mm}$ ,  $f/4.5 : 85\text{mm}$ )
- When focusing, 1st lens group (focusing lens group) is moved by rotating AF conpler or focusing ring.
- By rotating zoom ring from  $f=28\text{mm}$  to macro side, 2nd and 4th lens groups are moved, 1st and 3rd lens groups are fixed to make macro set.  
(Subject-to-camera distance (D)=0.8m, magnification 1:4)



※Moved by rotating focusing ring. (AF does not operate at macro set.)

## ■ Wiring schematic diagram and printed wiring diagram



L<sub>1</sub>-5 : Lens signal contact  
 R<sub>1</sub>-3 : Printed resistor  
 ML-00C : ROM-IC  
 A-E : Soldering point  
 P<sub>0</sub>-2 : Rotary encoder pattern switch  
 (ON/OFF at certain zooming point)

